

IN THE CLAIMS

This listing of claims will replace all prior versions, and listings, of claims in the application. An identifier indicating the status of each claim is provided.

Listing of Claims

1 – 19. (Canceled)

20. (New) An illumination unit, for a projection system device, comprising:
at least one primary illumination light providing portion (10) adapted for providing primary illumination light (L1);
at least one secondary illumination light providing portion (30) adapted for emitting secondary illumination light (L2) derived from said primary illumination light (L1); and
at least one light selecting element (20) disposed between and assigned to said primary illumination light providing portion (10) and said secondary illumination light providing portion (30) and being simultaneously adapted to select one of predefined spectral components or colors of one of a plurality of predefined polarization components from said primary illumination light (L1) and to thereby generate said secondary illumination light (L2),
wherein said light selecting element (20) comprises a dichroic multilayer structure (25) that is adapted to act as a dichroic spectral filter device for incident primary illumination light (L1),
wherein said dichroic multilayer structure (25) forms at least a part of a diffractive grating structure (21) of said light selecting element (20),
wherein said light selecting element (20) is formed as a single optical unit, and

wherein said light selecting element (20) is adapted in order to reflect an s-polarized component of one predefined spectral component of said primary illumination light (L1) and in order to transmit a p-polarized component of said one predefined spectral component of said primary illumination light (L1) and s-polarized and p-polarized components of all other spectral components of said primary illumination light (L1).

21. (New) An illumination unit according to claim 20,
wherein said diffractive grating structure (21) comprises at least a grating bulk material (21b), having a light incidence surface (20a).

22. (New) An illumination unit according to claim 21,
wherein said grating bulk material (21b) is provided with an alternating sequence of concave (21r) and convex protrusions (21p), in or on said light incident surface (20a) of said grating bulk material (21b), so as to form grating line elements (22) of said diffractive grating structure (21).

23. (New) An illumination unit according to claim 21,
wherein said grating bulk material (21b) includes a sequence of embedded material portions, so as to form grating line elements (22) of said diffractive grating structure (21).

24. (New) An illumination unit according to claim 22,
wherein said convex protrusions (21p), said concave recesses (21r) and said

embedded material portions are respectively essentially identical, have an essentially linear extension and are disposed equally spaced and parallel to each other.

25. (New) An illumination unit according to claim 22,
wherein said concave recesses (21r) of said grating bulk material (21b) and said embedded material portions are filled with a filling material.

26. (New) An illumination unit according to claim 25,
wherein said filling material has a refractive index which is different from a refractive index of said grating bulk material (21b).

27. (New) An illumination unit according to claim 21,
wherein said grating bulk material (21b) comprises a plurality of layers.

28. (New) An illumination unit according to claim 20,
wherein said dichroic multilayer structure (25) comprises an alternating sequence of at least a first layer material (25-1) and a second layer material (25-2), said first and second layer materials (25-1, 25-2) having different refraction indices (n_1 , n_2).

29. (New) An illumination unit according to claim 28,
wherein said dichroic multilayer structure (25) and said first and second layer materials (25-1, 25-2) thereof extend in a plane of said light incidence surface (20a) and parallel thereto.

30. (New) An illumination unit according to claim 23,
wherein at least a part of said concave recesses (21r), of said convex protrusions
(21p) and at least a part of said embedded material portions (21e) are formed in said dichroic
multiplayer structure (25).